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ABSTRACT

While existing research on school and school district size is not as conclusive as policymakers might wish, it does point toward several new policy directions. Some relevant findings and recommendations are: (1) a larger school or district enrollment does not guarantee desirable results; (2) recommended school sizes have been declining over time, with recent reform efforts emphasizing the restructuring of education, local decision making and autonomy, and establishing "schools within schools" in settings where the school has been judged as too large; (3) each reorganization is highly individualistic (thus reducing the role of "expert knowledge"); (4) as measures of learning outcomes become more refined and more widely available, it becomes less important for the state to specify sizes and organizational structures for schools and districts; and (5) policymakers should remain receptive to novel approaches to reorganization, since the remaining small schools and school districts in the United States are almost without exception "hard cases" to which conventional approaches are not applicable. In place of the "all or nothing" reorganization approach typically sought by state departments of education, a range of alternative approaches has emerged. These include cooperatives and clusters that use a variety of strategies to cooperate across organizational boundaries, locally designed partial or gradual reorganizations, and cross-function reorganizations in which a single administrative structure oversees all rural community services (including education). (SV)

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Modern Conceptions of Educational Quality and State Policy Regarding Small Schooling Units

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Introduction

In this paper, I seek to reconcile emerging ideas about the improvement of schools with longstanding policy concerns about small schools and school districts. The exploration is timely given the states' renewed interest in questioning the viability of small schooling units; it is also timely because of changes in how states view their responsibility for improving public education.

The paper addresses four questions. The first asks about trends in the conceptualization and measurement of school quality. The next two questions address the specific concerns of small schools and school districts. The fourth question invites recommendations for policy makers concerned with these issues.

Question I: What are the best indicators of the quality of education offered by a school or district?

Important progress is being made on two fronts with respect to the conceptualization and measurement of educational quality. First, progress has been made in the assessment of student learning; second, more refined methods for measuring school processes are available.

Learning Outcome Indicators

Important developments in the assessment of human capabilities have taken place recently. New opportunities are available for states to move away from conventional multiple-choice assessment instruments and toward what are known as authentic or performance-oriented examinations.[1]

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[1] Since the middle 1980s, more than 40 states have adopted writing samples instead of multiple-choice examinations to assess children's writing abilities (Pelavin 1992).

These new approaches to assessment promise to measure human performance that is relevant for future economic and social success (New Standards Project 1992).

The availability of these new "more relevant" indicators of learning is prompting more aggressive efforts to measure schooling effects. Two types of indicators are becoming available. One is based on measures of absolute performance. Using this type of indicator, a high quality school would be a school with a high average performance, after the effects of social background have been removed.[2] There also could be interest in one portion of the achievement distribution. In this light, the high quality school might be the school with high performance within the bottom (or top, or some other) quartile of the achievement distribution, once the effects of social class are removed.

Second, learning outcome indicators can be based on measures of improvement, rather than absolute performance levels. According to these measures, high quality schools will be those registering the greatest improvement. Again, the focus might be on improvement in average scores or on some particular range within the distribution.

A number of states have moved to incorporate these emerging measures of quality into their school finance formulae. In these states, high performance is rewarded monetarily, either at the school or individual teacher level.[3]

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[2] Attempts to remove social background effects raise a host of statistical and measurement issues. For an overview of what is involved, plus policy recommendations, see Meyer (1991).

[3] Schools in South Carolina, for example, receive approximately $30 per pupil if the school registers a sufficiently large improvement along several dimensions in relation to a comparison group. South Carolina also provides rewards that accrue to individual teachers based on measures of pupil performance.

Schooling Process Indicators

Efforts are also under way to develop more refined measurement of schooling processes.[4] Much of this work has focused on science and mathematics education and includes efforts to specify what a high quality program entails. These input oriented efforts to define quality must contend with the fact that research linking inputs such as teacher experience, training, class size, and the like to measures of pupil achievement has tended to be inconclusive (Hanushek 1986). However, recent research suggests that more refined measures of important inputs such as the knowledge teachers have of the subject matter have positive effects on pupil achievement.[5] As confidence increases in selected inputs, the high quality school can be identified by its supply of key inputs.

Progress also has been made to use process-oriented indicators to measure school success at producing educational opportunities for students. These indicators examine phenomena such as the breadth and depth of a curriculum (see Porter 1991). Progress also is being made to develop more refined measurement of how accessible certain educational opportunities are for students. Monk (1992), for example, proposed to measure accessibility of a given course within a school's curriculum by examining how often it appears in a master schedule and the proportion of students who are eligible to enroll.

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[4] See, for examples, Koretz (1992); McDonnell, et al. (1990); Oakes (1990); Porter (1991); Shavelson, et al. (1987); and Stecher (1992).

[5] See, for examples, Ferguson 1991, Hanushek 1992, and Monk 1992. For an overview of this type of research with an emphasis on implications for policy making, see Monk, in press.

As we approach the midpoint of the 1990s, it appears that policymakers will be able to draw upon two conceptually distinct but closely interrelated indices of educational quality. The availability of these new standards has far-reaching implications for how states approach their small schools and school districts.

Question II: What is the relationship between a school's size, cost, and quality.

Good theoretical reasons exist for expecting larger-sized organizational units to be able to operate more efficiently than otherwise identical smaller units. More concretely, the expectation is that larger-sized units will be able to produce the same outcomes at a lower unit cost.[6]

If the theory is applicable to the production of educational outcomes within school settings, it ought to be possible to show that larger sized schools either offer richer instructional programs or operate at lower costs.[7]

In the mid-1980s, a group of researchers began to look systematically at the degree to which school size translated into richer curricular offerings within secondary schools.[8] The findings of this research can be summarized as follows:

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[6] However, there are also reasons to suppose that there may be a limit on the degree to which larger size translates into improved efficiency. Thus, according to the theory, it is reasonable to conceive of an "optimal" size for organizations.

[7] There are numerous reasons for being skeptical about how applicable conventional economic theory of scale is to education. For a more detailed discussion of the limitations involved and the kinds of assumptions that need to be made, see Monk (1990, Chapter 13).

[8] See, for examples, Barker (1985); Haller, et al. (1990); McKenzie (1989); Monk (1987); Monk and Haller (in press); and West, et al. (1985).

1. The effect of school size on curricular offerings varies depending on the subject area of the curriculum. For example, school size has much less impact on course offerings in social studies and science than in foreign languages and the performing and visual arts.
2. The strength of the relationship between school size and curricular offerings diminishes as schools become larger. Increases in the size of very small schools are associated with greater curricular gains than increases in the size of larger schools.
3. School size is related to the types of courses that are added within subject areas. In particular, school size is positively related to the share of the academic curriculum devoted to advanced and remedial courses. In most subjects, advanced courses grow more rapidly with school size than do remedial courses.
4. Substantial variation in curricular offerings among high schools remains after the effects of school size are removed. There are small schools with rich curricular offerings just as there are large schools with modest offerings. School size alone explains roughly half of the variation in course offerings among high schools.
5. The mere presence of a course in a curriculum is no guarantee of widespread student participation. Remarkably small percentages of students within larger schools take advantage of those courses found only within large school curricula.

Less research attention has been devoted to the tax-savings dimension of the purported benefits of larger school size. In part, this is because school level fiscal data are difficult to obtain. A comprehensive analysis where both instructional and cost consequences of differences in school size has yet to be conducted. Moreover, most of the existing research concerns cross-

sectional differences among different sized schools. The cross-sectional differences may be quite distinct from changes that arise out of shifts in school size, particularly those imposed by external authorities such as the larger state or school district.[9]

Question III: What is the relationship between a school district's size, cost, and quality? Economies of scale can exist at the school district level and typically involve the underutilization of central administrative resources. Much of the "problem" stems from the indivisibility of such resources. While some districts have attempted to "share" superintendents as a means of offsetting this problem (see Sederberg 1985), it can be difficult for small administrative units to make complete use of central administrative talent. This difficulty is due partly to the nature of the administrative duties. It is difficult to split an individual between, say, classroom and administrative responsibilities. Yet, if the individual is assigned full-time to administrative duties, there may not be enough work to employ this individual fully.

The efficiency problem is compounded by the degree to which the small district must compete with larger districts for administrative talent. This tends to be a fairly obvious instance of inefficiency, and several states have taken steps to cut central administrative costs by attempting to consolidate district administration.[10] The reasoning seems to be that if two districts could be merged or consolidated in some way, taxpayers could hire one superintendent instead of two and pocket the resulting savings.

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[9] Some case studies have been made of the effects of consolidation policies on the internal operation of schools and school districts. See, for examples, Monk and Haller (1986) and Peshkin (1982).

[10] Rhode Island is a good recent example (21st Century Education Commission 1992).

There are several reasons for being skeptical about such reasoning. First, while the scenario outlined above seems straightforward and appealing, the reality may be quite different. If the merged district responds by hiring an assistant or deputy superintendent to help the superintendent fulfill his or her duties, the savings to taxpayers can be substantially eroded. In fact, it would be possible to face higher administrative costs following the reorganization, particularly if community turmoil is a by-product.

Second, it is important to remember that central administrative costs are a relatively small portion of school districts' budgets. The real savings associated with reorganization and consolidation strategies arise to the extent that average class sizes rise with a loss in student performance (and no increase in teacher compensation). Inefficiency in the deployment of central administrative resources may be real in smaller districts, but its magnitude tends to be small when measured in dollars. It is not obvious that these relatively small potential savings will be worth the unrest that state-inspired efforts to promote district consolidation can generate. In short, far more cost/effective means of improving the efficiency of small school districts may be found, and a prudent state should focus on these other areas. Moreover, less conventional district reorganization strategies are available to states. These strategies involve what have been called cross-function reorganizations. They are described in the response to Question IV.

Question IV: Based on existing research, what advice can be offered to local school boards and state policymakers regarding school and school district size?

While the existing research is not as conclusive as policymakers might wish, it does point toward several new policy directions. First, it is important for state and local officials to realize that

a larger school or district enrollment is not sufficient in itself to achieve desirable results. It is quite possible for large schools to exist with inadequate curricular offerings. Similarly, it is quite possible for students not to take advantage of courses that become available in larger settings. Moreover, evidence is accumulating that suggests that access to important specialized courses can be quite restricted even in quite large schools (due primarily to tracking and grouping policies). Thus, while small school or district size may be a real constraint on the ability of school officials to offer comprehensive programs, merely to remove the constraint is not sufficient. Further state involvement appears to be warranted to ensure that scale economies are fully realized.

Second, state officials, in particular, need to understand that recommended school sizes have been declining over time. The modern school reform movement of the 1980s and 1990s emphasizes the importance of restructuring education, giving decision makers at local levels more autonomy, and establishing "schools within schools" in settings where the school has been judged as too large. It is ironic to contrast these initiatives with the incentives and other parallel efforts that states make to encourage school and school district consolidations (Haller and Monk 1988).

Third, policymakers need to be more attentive to the unique features of each school or district reorganization. The case studies on this topic suggest that each reorganization is highly individualistic. This reduces the role of "expert knowledge." Reorganization advocates must confront the reality that each reorganization is unique and that experiences gained elsewhere will be relatively inapplicable.

Fourth, policymakers need to realize that as measures of learning outcomes become more refined and more widely available, it will become less and not more important for the state to specify preferred district and school size and organizational structure. It seems clear that we are moving toward accountability systems that are driven by measures of outcomes. The state is, in effect, saying to its schooling units: "How you go about your business is your concern, but we will hold you accountable for achieving certain results." In such a world, the state will care less whether the district or school is large or small, and more about whether the students reach the chosen threshold learning levels.

This point also applies to the more refined school process indicators that are becoming available. A state might stipulate that it expects to see a calculus course in every secondary school's mathematics curriculum. How the school accomplishes this goal would be a matter of local concern. The challenge here is for the state to devise ways to ensure a minimum level of quality in the opportunity without dictating how the district (or school) must conduct its affairs.

Fifth, state and local officials need to remain receptive to novel approaches to the reform of organizational structures. In particular, they need to remember that the remaining small schools and school districts in this nation are almost without exception "hard cases" that probably do not lend themselves to conventional reorganization solutions.

Throughout the nation, efforts have been made over the years to reduce the number of small schooling units. These efforts have been remarkably successful, and far fewer schools and school districts exist today than at the turn of the century. Nevertheless, a substantial number

of quite small units remain, and these units are small, presumably not for a lack of effort to reorganize them into larger units.

In some of these places, aggressive attempts have been made to close schools and reorganize districts. Bitterness and skepticism about the motives of the state can linger for years in the aftermath of such failed attempts. Other locations face such massive barriers to reorganization that they have not even seriously attempted to reorganize. Some of these barriers may be geographic; others may stem from irreconcilable social differences across communities. The point is that the remaining small districts and schools will not be easily reorganized using conventional remedies, even if a reorganization is quite defensible given objective measures of program quality and taxpayer burdens.

In place of the conventional "all or nothing" reorganization approach typically sought by state departments of education, a range of alternative approaches has emerged. State and local policymakers are well advised to consider seriously these alternative approaches to reorganization. They are briefly sketched below; additional information is available elsewhere.[11]

A. Cooperatives and clusters. It seems abundantly clear that no all-purpose administrative structure is capable of fostering cooperation in the delivery of a wide range of substantive educational services. In some settings, more formal structures are warranted; in others, a more flexible arrangement has been shown to have beneficial results (Nachtigal 1984). Greater sensitivity to the difficulties inherent in cooperating across organizational boundaries is

[11] See Monk (1988); also see Monk and Haller (1986).

warranted. Research on this topic is beginning to be conducted and should be helpful to policymakers.[12]

B. Locally designed partial reorganizations. Reorganizations are not always comprehensive. It is possible, for example, for the reorganization to be phased in gradually over time. It is also possible for remnants of the prior organizational structure to remain, perhaps for some fixed period of time. For example, two school districts coming together in a union might agree at the outset that a certain school will remain open and serve certain grade levels for some period. These are examples of how local communities can design a reorganization that suits the particular needs of the affected communities. In their recommendations to the New York State Legislature, Monk and Haller (1986) encouraged the state to give the affected communities a larger say in the design of reorganization possibilities.

C. Cross-function reorganizations. Finally, there are the cross function reorganizations mentioned earlier in conjunction with district level inefficiencies. Rather than reorganize separate school districts into larger administrative units, the goal is to bring into a single administrative structure the numerous social services that are provided by local communities. The result would be a single administrative unit in a community that would be responsible for delivering a wide range of services, including education. The local unit might handle police, health, sanitation, and recreation, to name just a few of the possible services in addition to education. Of course, specialized administrative talent would be necessary for specific duties (e.g., teacher evaluation), but such services could be provided on a contractual basis with the state or a neighboring school district.

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[12] See Galvin (1990), for an example.

While cross-function reorganizations contain certain drawbacks, the appeal of a single administrative unit located in a small rural population center has considerable appeal and counts as a promising alternative to conventional school district reorganization.

One final point is important. Changes in educational technology could have immense implications for the organizational structuring not only of small rural schools but of all kinds of educational endeavors. To date, progress has been slow, but the potential is real. It is a worthy area for future research and development. For our purposes, we need to recognize that planning with respect to the organizational structuring of small schools and districts is necessarily contingent upon the development of educational technology.

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